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CALIFORNIA LEGISLATURE—2007—08 REGULAR SESSION

## **ASSEMBLY BILL**

**No. 1613**

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**Introduced by Assembly Member Blakeslee  
(Coauthors: Assembly Members Adams, Emmerson, Parra, and  
Torrico)**

February 23, 2007

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An act to add Chapter 8 (commencing with Section 2840) to Part 2 of Division 1 of the Public Utilities Code, relating to energy.

### LEGISLATIVE COUNSEL'S DIGEST

AB 1613, as amended, Blakeslee. Energy: Waste Heat and Carbon Emissions Reduction Act.

(1) Under existing law, the Public Utilities Commission (PUC) has regulatory authority over public utilities, including electrical corporations, as defined. Existing law authorizes the PUC to fix the rates and charges for every public utility, and requires that those rates and charges be just and reasonable. The existing Public Utilities Act requires the PUC to review and adopt a procurement plan for each electrical corporation in accordance with specified elements, incentive mechanisms, and objectives. The act additionally requires the PUC, in consultation with the Independent System Operator, to establish resource

adequacy requirements for all load-serving entities, as defined, in accordance with specified objectives.

The existing Warren-Alquist State Energy Resources Conservation and Development Act establishes the State Energy Resources Conservation and Development Commission (Energy Commission) and requires it to undertake a continuing assessment of trends in the consumption of electricity and other forms of energy and to analyze the social, economic, and environmental consequences of those trends and to collect from electric utilities, gas utilities, and fuel producers and wholesalers and other sources, forecasts of future supplies and consumption of all forms of energy. The PUC and the Energy Commission have jointly adopted an Energy Action Plan II that includes a loading order that describes the priority sequence for actions to address the state's increasing electricity needs, and that identifies energy efficiency and demand response measures as the state's preferred means of meeting growing electricity needs.

This bill would enact the Waste Heat and Carbon Emissions Reduction Act. The bill would provide that it is the policy of the state that the conversion of waste heat to electricity or other useful energy applications be the preferred generation measure immediately following renewables for purposes of the loading order. The bill would state the intent of the Legislature: (A) to dramatically advance the efficiency of the state's use of natural gas by capturing unused waste heat, (B) to reduce wasteful consumption of energy through improved residential, commercial, institutional, industrial, and manufacturer utilization of waste heat whenever it is cost effective, technologically feasible, and environmentally beneficial, particularly when this reduces emissions of carbon dioxide and other carbon-based greenhouse gases, and (C) to support and facilitate both customer-owned and utility-owned combined heat and power systems.

This bill would require an electrical corporation to purchase excess electricity, as defined, delivered by a combined heat and power system, as defined, that complies with certain sizing, energy efficiency, and air pollution control requirements, *but would authorize the PUC to establish a maximum kilowatthours limitation on the amount of excess electricity that an electrical corporation is required to purchase if the commission finds that the anticipated excess electricity generated has an adverse effect on long-term resource planning or causes uncertainty in the wholesale generation market.* The bill would require every electrical corporation to file a standard tariff with the PUC for the purchase of

excess electricity from an eligible customer-generator, as defined, would require the electrical corporation to make the tariff available to eligible customer-generators within the service territory of the electrical corporation upon request, and would authorize the electrical corporation to make the terms of the tariff available in the form of a standard contract. The bill would require that the costs and benefits associated with any tariff or contract be allocated to benefitting customers, as defined. The bill would require the PUC to establish for each electrical corporation, a pay-as-you-save pilot program, meeting certain goals, for eligible customers, as defined, to finance all of the upfront costs for the purchase and installation of combined heat and power systems. The bill would require the PUC, in approving an electrical corporation's procurement plan, to require the plan to assess the reliability of incorporating combined heat and power solutions to the maximum degree that is cost effective compared to other competing forms of wholesale generation, technologically feasible, and environmentally beneficial, particularly as it pertains to reducing emissions of carbon dioxide and other greenhouse gases.

*This bill would require a local publicly owned electric utility serving retail end-use customers to establish a program that allows retail end-use customers to utilize combined heat and power systems that reduce emissions of greenhouse gases by achieving improved efficiencies utilizing heat that would otherwise be wasted in separate energy applications and that provides a market for the purchase of excess electricity generated by a combined heat and power system, at a just and reasonable rate, to be determined by the governing body of the utility. By placing additional requirements upon local publicly owned electric utilities, the bill would impose a state-mandated local program.*

This bill would require the Energy Commission, by January 1, 2010, to adopt regulations for various applications of combined heat and power systems that reduce waste energy, that ensure that a system is sized to match an eligible customer-generator's thermal load, *ensure that a system is continuously operated in a manner to optimize efficiency by utilizing all waste heat*, is cost effective, technologically feasible, and environmentally beneficial. The bill would authorize the Energy Commission to adopt temporary guidelines for combined heat and power systems prior to January 1, 2010. The bill would require an eligible customer-generator's combined heat and power system to meet certain efficiency and emissions requirements. The bill would require an eligible customer-generator to adequately maintain and service the combined

heat and power system so that during operation, the system continues to meet or exceed the efficiency and emissions requirements.

(2) The existing California Global Warming Solutions Act of 2006, requires the State Air Resources Board (state board) to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with the reporting and verification program, as specified, and requires the state board to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990 to be achieved by 2020. The act requires the state board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective reduction in emissions of greenhouse gases and authorizes the state board to adopt market-based compliance mechanisms, as defined, meeting specified requirements. Existing law requires the PUC, by February 1, 2007, through a rulemaking proceeding and in consultation with the Energy Commission and the state board, to establish a greenhouse gases emission performance standard for all baseload generation of load-serving entities.

This bill would require that a combined heat and power system comply with the greenhouse gases emission performance standard established by the PUC. ~~The bill would state the intent of the Legislature to establish for each electrical corporation, a variable rate program that is applicable to eligible customer-generators who utilize electric vehicles or plug-in hybrid vehicles in their fleet that will encourage bi-directional sharing of electricity between vehicles and the electrical grid, to increase grid reliability and achieve an overall reduction of greenhouse gases and other air pollutants emitted from both electricity generation and mobile sources.~~

~~(3) Executive Order S-20-04 (Green Building Order) ordered certain state entities, and requested certain other state entities, to undertake measures to reduce state building electricity usage consistent with a Green Building Action Plan, and encouraged commercial building owners, cities, counties, and schools to undertake measures to reduce electricity usage. The Green Building Order ordered that state agencies, departments, and other entities under the direct executive authority of the Governor cooperate in taking measures to reduce grid-based energy purchases for state-owned buildings by 20% by 2015, through cost-effective efficiency measures and distributed generation technologies.~~

~~This bill would require state-owned buildings that have been occupied prior to January 1, 2008, to have their existing systems upgraded to utilize combined heat and power systems to assist in achieving the goal of reducing grid-based energy purchases for state-owned buildings. The bill would require all state-owned buildings that are first occupied after December 31, 2007, to incorporate combined heat and power systems to maximize energy efficiency whenever doing so is cost effective, technologically feasible, and environmentally beneficial.~~

~~(4)~~

(3) This bill would require the state board to report to the Governor and the Legislature by December 31, 2011, on the reduction in emissions of greenhouse gases resulting from the increase of new electrical generation that utilizes excess waste heat through combined heat and power systems and recommend policies that further the goals of the bill.

~~(5)~~

(4) Existing law makes any public utility, as defined, and any corporation other than a public utility, that violates or that fails to comply with any part of any order, decision, rule, direction, demand, or requirement of the commission, guilty of a crime.

Because certain provisions of the bill would require commission action to implement and a violation or failure to comply with any part of any order, decision, rule, direction, demand, or requirement of the commission would be a crime, the bill would impose a state-mandated local program by creating a new crime.

~~(6)~~

(5) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act ~~for a specified reason~~ *specified reasons*.

Vote: majority. Appropriation: no. Fiscal committee: yes.  
State-mandated local program: yes.

*The people of the State of California do enact as follows:*

1 SECTION 1. Chapter 8 (commencing with Section 2840) is  
2 added to Part 2 of Division 1 of the Public Utilities Code, to read:

## CHAPTER 8. ENERGY EFFICIENCY SYSTEMS

## Article 1. Waste Heat and Carbon Emissions Reduction Act

2840. This article shall be known and may be cited as the Waste Heat and Carbon Emissions Reduction Act.

2840.2. For purposes of this article, the following terms have the following meanings:

(a) “Combined heat and power system” means a system for the generation of electricity that meets all of the following:

(1) Is interconnected to, and operates in parallel with, the electric transmission and distribution grid.

(2) Utilizes waste heat for the generation of electricity.

(3) Is sized to meet the eligible customer-generator’s on-site thermal demand.

(4) Meets the efficiency standards of subdivision (c) and the greenhouse gases emissions performance standard of subdivision (d) of Section 2843.

(b) “Eligible customer-generator” means a customer of an electrical corporation that meets both of the following requirements:

(1) Uses a combined heat and power system with a generating capacity of not more than 20 megawatts, that first commences operation on or after January 1, 2008.

(2) Uses a time-of-use meter capable of registering the flow of electricity in two directions. If the existing electrical meter of an eligible customer-generator is not capable of measuring the flow of electricity in two directions, the eligible customer-generator shall be responsible for all expenses involved in purchasing and installing a meter that is able to measure electricity flow in two directions. If an additional meter or meters are installed, the electricity flow calculations shall yield a result identical to that of a time-of-use meter.

(c) “Electrical corporation” has the same meaning as defined in Section 218.

(d) “Energy Commission” means the State Energy Resources Conservation and Development Commission.

(e) “Excess electricity” means the net electricity exported to the electrical grid, generated by a combined heat and power system that is in compliance with Section 2843.

1 (f) “Greenhouse gas” or “greenhouse gases” includes all of the  
2 following gases: carbon dioxide, methane, nitrous oxide,  
3 hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

4 2840.4. The Legislature finds and declares all of the following:

5 (a) Combined heat and power systems produce both electricity  
6 and thermal energy from a single fuel input, thus achieving much  
7 greater efficiency than the usual separate systems for producing  
8 these forms of energy, and reducing consumption of fuel.

9 (b) Combined heat and power systems recover heat that would  
10 otherwise be wasted in separate energy applications, and use this  
11 heat to avoid consumption of fuel that would otherwise be required  
12 to produce heat.

13 (c) Combined heat and power systems recycle the valuable  
14 waste heat produced in electricity generation and use it for heating,  
15 cooling, and other useful applications.

16 (d) Gigawatthours of potential useful electricity and millions  
17 of British thermal units of thermal energy could be derived from  
18 unused waste heat that is currently being vented into the  
19 atmosphere.

20 2840.6. (a) It is the intent of the Legislature that state policies  
21 dramatically advance the efficiency of the state’s use of natural  
22 gas by capturing unused waste heat, and in so doing, help offset  
23 the growing crisis in electricity supply and transmission congestion  
24 in the state.

25 (b) It is the intent of the Legislature to reduce wasteful  
26 consumption of energy through improved residential, commercial,  
27 institutional, industrial, and manufacturer utilization of waste heat  
28 whenever it is cost effective, technologically feasible, and  
29 environmentally beneficial, particularly when this reduces  
30 emissions of carbon dioxide and other carbon-based greenhouse  
31 gases.

32 (c) It is the intent of the Legislature to support and facilitate  
33 both customer and utility-owned combined heat and power systems.

34 (d) This article does not apply to, and shall not impact, combined  
35 heat and power systems in operation prior to January 1, 2008, or  
36 combined heat and power systems with a generating capacity  
37 greater than 20 megawatts.

38 2841. (a) An electrical corporation shall purchase from an  
39 eligible customer-generator, excess electricity that is delivered to  
40 the grid that is generated by a combined heat and power system

1 that is in compliance with Section 2843. *The commission may*  
2 *establish a maximum kilowatthours limitation on the amount of*  
3 *excess electricity that an electrical corporation is required to*  
4 *purchase if the commission finds that the anticipated excess*  
5 *electricity generated has an adverse effect on long-term resource*  
6 *planning or causes uncertainty in the wholesale generation market.*

7 (b) (1) Every electrical corporation shall file with the  
8 commission a standard tariff for the purchase of excess electricity  
9 from an eligible customer-generator.

10 (2) The tariff shall provide for payment for every kilowatthour  
11 delivered to the electrical grid by the combined heat and power  
12 system at a price determined by the commission.

13 (3) The tariff shall include flexible rates with options for  
14 different durations, not to exceed 10 years, and fixed or variable  
15 rates relative to the cost of natural gas.

16 (4) The commission shall ensure that ratepayers not utilizing  
17 combined heat and power systems are held indifferent to the  
18 existence of this tariff.

19 (c) The commission, in reviewing the tariff filed by an electrical  
20 corporation, shall establish time-of-delivery rates that encourage  
21 demand management and net generation of electricity during  
22 periods of peak system demand.

23 (d) Every electrical corporation shall make the tariff available  
24 to eligible customer-generators that own, or lease, and operate a  
25 combined heat and power system within the service territory of  
26 the electrical corporation, upon request. An electrical corporation  
27 may make the terms of the tariff available to an eligible customer  
28 in the form of a standard contract.

29 (e) The costs and benefits associated with any tariff or contract  
30 entered into by an electrical corporation pursuant to this section  
31 shall be allocated to all benefiting customers. For purposes of this  
32 section “benefiting customers” ~~means all~~ *may, as determined by*  
33 *the commission, include* bundled service customers of the electrical  
34 corporation, customers of the electrical corporation that receive  
35 their electric service through a direct transaction, and customers  
36 of an electrical corporation that receive their electric service from  
37 a community choice aggregator.

38 (f) The physical generating capacity of the combined heat and  
39 power system shall count toward the resource adequacy  
40 requirements of load serving entities for purposes of Section 380.



(g) The commission shall adopt or maintain standby rates or charges for combined heat and power systems that are based only upon assumptions that are supported by factual data, and shall exclude any assumptions that forced outages or other reductions in electricity generation by combined heat and power systems will occur simultaneously on multiple systems, or during periods of peak electrical system demand, or both.

2841.5. *A local publicly owned electric utility serving retail end-use customers shall establish a program that does both of the following:*

(a) *Allows retail end-use customers to utilize combined heat and power systems that reduce emissions of greenhouse gases by achieving improved efficiencies utilizing heat that would otherwise be wasted in separate energy applications.*

(b) *Provides a market for the purchase of excess electricity generated by a combined heat and power system, at a just and reasonable rate, to be determined by the governing body of the utility.*

2842. The commission, in approving a procurement plan for an electrical corporation pursuant to Section 454.5, shall require that the electrical corporation's procurement plan incorporate combined heat and power solutions to the ~~maximum degree that does not create system unreliability~~, *extent that it is cost effective* compared to other competing forms of wholesale generation, technologically feasible, and environmentally beneficial, particularly as it pertains to reducing emissions of carbon dioxide and other greenhouse gases.

2842.2. The commission shall ensure that an electrical corporation utilizes long-term planning and a reliability assessment for upgrades to its transmission and distribution systems and that any upgrades are not inconsistent with promoting combined heat and power systems that are cost effective, technologically feasible, and environmentally beneficial, particularly as those combined heat and power systems reduce emissions of greenhouse gases.

2842.4. (a) The commission shall, for each electrical corporation, establish a pay-as-you-save pilot program for eligible customers.

(b) For the purposes of this section, an "eligible customer" means a customer of an electrical corporation that meets the following criteria:

1 (1) The customer uses a combined heat and power system with  
2 a generating capacity of not more than 20 megawatts that is in  
3 compliance with Section 2843.

4 (2) The customer is a nonprofit organization described in Section  
5 501(c) (3) of the Internal Revenue Code (26 U.S.C. Sec. 501(c)  
6 (3)), that is exempt from taxation under Section 501(a) of that code  
7 (26 U.S.C. Sec. 501(a)).

8 (c) The pilot program shall enable an eligible customer to  
9 finance all of the upfront costs for the purchase and installation of  
10 a combined heat and power system by repaying those costs over  
11 time through on-bill financing at the difference between what an  
12 eligible customer would have paid for electricity and the actual  
13 savings derived *for a period of up to 10 years*.

14 (d) The commission shall ensure that the reasonable costs of  
15 the electrical corporation associated with the pilot program are  
16 recovered.

17 (e) All costs of the pay-as-you-save program or financing  
18 mechanisms shall be borne solely by the combined heat and power  
19 generators that use the program or financing mechanisms, and the  
20 commission shall ensure that the costs of the program are not  
21 shifted to the other customers or classes of customers of the  
22 electrical corporation.

23 (f) Each electric corporation shall make on-bill financing  
24 available to eligible customers until the statewide cumulative rated  
25 generating capacity from pilot program combined heat and power  
26 systems in the service territories of the three largest electrical  
27 corporations in the state reaches 100 megawatts. *An electrical*  
28 *corporation shall only be required to participate in the pilot*  
29 *program until it meets its proportionate share of the 100 megawatts*  
30 *limitation, based on the percentage of its peak demand to the total*  
31 *statewide peak demand within the service territories of all*  
32 *electrical corporations.*

33 2843. (a) The Energy Commission shall, by January 1, 2010,  
34 adopt regulations for various applications of combined heat and  
35 power systems that reduce waste energy, ensure that a system is  
36 sized to match an eligible customer-generator's thermal load,  
37 *ensure that a system is continuously operated in a manner to*  
38 *optimize efficiency by utilizing all waste heat*, and is cost effective,  
39 technologically feasible, and environmentally beneficial. It is the  
40 intent of the Legislature that the regulations do not permit

1 customers to operate as de facto wholesale generators with  
2 guaranteed purchasers for their electricity.

3 (b) Prior to January 1, 2010, the Energy Commission may adopt  
4 temporary guidelines for combined heat and power systems that  
5 comply with the parameters set forth in subdivision (a).

6 (c) (1) An eligible customer-generator's combined heat and  
7 power system shall meet an oxides of nitrogen (NOx) emissions  
8 rate standard of 0.07 pounds per megawatt-hour and a minimum  
9 efficiency of 60 percent. A minimum efficiency of 60 percent shall  
10 be measured as useful energy output divided by fuel input. The  
11 efficiency determination shall be based on 100 percent load.

12 (2) An eligible customer-generator's combined heat and power  
13 system that meets the 60-percent efficiency standard may take a  
14 credit to meet the applicable NOx emissions standard of 0.07  
15 pounds per megawatt-hour. Credit shall be at the rate of one  
16 megawatt-hour for each 3.4 million British thermal units of heat  
17 recovered.

18 (d) An eligible customer-generator's combined heat and power  
19 system shall comply with the greenhouse gases emission  
20 performance standard established by the commission pursuant to  
21 Section 8340.

22 (e) An eligible customer-generator shall adequately maintain  
23 and service the combined heat and power system so that during  
24 operation, the system continues to meet or exceed the efficiency  
25 and emissions standards established pursuant to subdivisions (c)  
26 and (d).

27 ~~2844. (a) A state building that has been occupied prior to~~  
28 ~~January 1, 2008, shall have its existing systems upgraded to utilize~~  
29 ~~combined heat and power systems to assist in achieving the goal~~  
30 ~~of reducing grid-based energy purchases for state buildings~~  
31 ~~whenever doing so is cost effective, technologically feasible, and~~  
32 ~~environmentally beneficial.~~

33 ~~(b) State buildings that have been first occupied after December~~  
34 ~~31, 2007, shall have their combined heat and power systems~~  
35 ~~incorporated to maximize energy efficiency whenever doing so is~~  
36 ~~cost effective, technologically feasible, and environmentally~~  
37 ~~beneficial.~~

38 2845. The State Air Resources Board shall report to the  
39 Governor and the Legislature by December 31, 2011, on the  
40 reduction in emissions of greenhouse gases resulting from the

1 increase of new electrical generation that utilizes excess waste  
2 heat through combined heat and power systems and recommend  
3 policies that further the goals of this article.

4 ~~SEC. 2. It is the intent of the Legislature to establish for each~~  
5 ~~electrical corporation, a variable rate program that is applicable to~~  
6 ~~eligible customer-generators who utilize electric vehicles or plug-in~~  
7 ~~hybrid electric vehicles in their fleet, that will encourage~~  
8 ~~vehicle-to-grid technology that allows for the bi-directional sharing~~  
9 ~~of electricity between vehicles and the electric power grid, thereby~~  
10 ~~increasing grid reliability and the amount of renewable energy~~  
11 ~~available to the grid during peak electricity usage, while at the~~  
12 ~~same time achieving an overall reduction of greenhouse gases and~~  
13 ~~other air pollutants emitted from both electricity generation and~~  
14 ~~mobile sources.~~

15 ~~SEC. 3.~~

16 *SEC. 2.* No reimbursement is required by this act pursuant to  
17 Section 6 of Article XIII B of the California Constitution because  
18 ~~the only~~ *certain* costs that may be incurred by a local agency or  
19 school district will be incurred because this act creates a new crime  
20 or infraction, eliminates a crime or infraction, or changes the  
21 penalty for a crime or infraction, within the meaning of Section  
22 17556 of the Government Code, or changes the definition of a  
23 crime within the meaning of Section 6 of Article XIII B of the  
24 California Constitution.

25 *With respect to certain other expenses, no reimbursement is*  
26 *required by this act pursuant to Section 6 of Article XIII B of the*  
27 *California Constitution because a local agency or school district*  
28 *has the authority to levy service charges, fees, or assessments*  
29 *sufficient to pay for the program or level of service mandated by*  
30 *this act, within the meaning of Section 17556 of the Government*  
31 *Code.*